REMARKS

This Amendment is filed in response to the Final Office Action mailed on June 26, 2006. Applicant respectfully urges that this Amendment is appropriate for entry after Final Rejection, as it does not require a new search or significant consideration of new claim recitations by the Examiner. Amendment to the claims is the result of incorporating a previously-considered dependent claim into the base claims. All objections and rejections are respectfully traversed.

Claims 1-2, 4-11, 13-16, and 18-23 are in the case.

Claim 3 has been cancelled.

Claims 12 and 17 were previously cancelled.

Claim 1 has been amended to better claim the invention.

No claims have been added.

Duplicate Claims Under 37 CFR 1.75

At Paragraph 1 of the Final Office Action, the Examiner advised that "should claims 1 and 9 be found allowable, claims 18 and 19, respectively will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof." (Office Action mailed June 26, 2006, Paragraph 1). Applicant respectfully traverses the objection.

Claims 1 and 18, representative in part of claims 9 and 19 respectively, recite as

follows:

1.   A method of operating a switch for frames in a computer network, comprising:

   receiving a frame (the received frame) at a port of said switch, said received frame containing one or more indicia of frame type designation, said one or more indicia of frame type designation comprising at least a protocol type;

   deriving a virtual local area network (derived VLAN) value in response to said one or more indicia of frame type designation, *said derived VLAN internal to said switch*;

   accessing a forwarding data base with said derived VLAN value to determine a destination address; and

   forwarding, in response to said derived VLAN value, said received frame to an output port for transmission to the destination.

18.   A method of operating a switch for frames in a computer network, comprising:

   receiving a frame (the received frame) at a port of said switch, said received frame containing one or more indicia of frame type designation;

   deriving a virtual local area network (derived VLAN) value in response to said one or more indicia of frame type designation;

   accessing a forwarding data base with said derived VLAN value to determine a destination address; and,

   forwarding, in response to said derived VLAN value, said received frame to an output port for transmission to the destination.

Thus, claims 1 and 9 recite *"said derived VLAN internal to said switch"*, in contrast to claims 18 and 19, which do not. Applicant respectfully urges that the recitation of

"said derived VLAN internal to said switch" is not "a slight difference in wording", as

characterized by the Examiner, because no parallel (i.e., slightly different) recitation appears in claims 18 and 19.

Accordingly, Applicant respectfully urges that the claims are not substantial duplicates and that claims 18 and 19 are allowable under 37 CFR 1.75.

Claims Rejected Under 35 U.S.C. § 112, First Paragraph

At Paragraph 3 of the Final Office Action, claims 21-23 were rejected under 35

U.S.C. § 112, first paragraph, as containing subject matter not described in the Specifica-

tion. Applicant respectfully traverses the rejection.

Claim 21, representative in part of the other rejected claims, recites:

21.   A system for sending frames in a computer network, comprising:

a plurality of switches to derive a virtual area network (derived VLAN) in response to one or more indicia of frame type designation;
and

a plurality of trunking ports to carry the derived VLAN across trunking links.

Specifically, the Examiner rejected "*a plurality of switches*," which appears in all

three rejected claims.

Applicant respectfully urges that the illustrative embodiments taught in the Speci-

fication support the claimed "*plurality of switches*." For example, at pages 16 and 17 of

the Specification, Applicant teaches:

As noted, *a frame received at an input port of the switch may be processed* in accordance with the port VLAN-based mapping technique described above *to generate a derived VLAN* associated with the frame. The derived VLAN is used to access the forwarding table and determine an output port associated with a destination. In some cases, the output port may be a trunking port (i.e., a source trunking port). Trunking ports are used for transferring frames over trunking links directly connecting switches. The frame transmitted from the source trunking port may carry VLAN information with it over a trunking link for use by the destination switch. Thus, the VLAN designation of destination trunking port may change. If the output port for the destination result is a trunking port, one

of two implementations of the derived VLAN invention may be employed.

In one implementation, the original VLAN designation assigned to the frame at the input port of the switch is appended onto an interlink switch (ISL) header of a frame. The ISL header contains a VLAN field for carrying a VLAN value over a trunking link (such as an IEEE Std 802.1q trunking link or an ISL link) to a destination trunking port.... *The destination switch of the destination trunking port re-derives the VLAN* using the original, non-derived VLAN in accordance with the port VLAN-based mapping technique described herein. (Specification, page 16, line 16 – page 17, line 9).

Thus, by way of example, Applicant teaches that a frame received at a first switch may be processed to generate a derived VLAN. The frame may then be sent to a second switch over a trunking link. The second switch may then re-derive the VLAN. This is one example illustrating Applicant's claimed *"plurality of switches to derive a virtual area network (derived VLAN) in response to one or more indicia of frame type designation."* Given this example, Applicant respectfully urges that claims 21-23 are described in the Specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the Application was filed, had possession of the claimed invention.

Accordingly, claims 21-23 are believed to allowable under 35 U.S.C. § 112, first paragraph.

Claims Rejected Under 35 U.S.C. § 102(e)

At Paragraph 5 of the Final Office Action, claims 1-2, 5, 7, 9-11, 13-16, and 18-20 were rejected under 35 U.S.C. § 102(e) as being anticipated by Crayford, U.S. Patent

No. 6,269,098 B1, issued on July 31, 2001 (hereinafter "Crayford"). Applicant respect-

fully traverses the rejection.

Amended claim 1 recites:

1.   A method of operating a switch for frames in a computer network, comprising:

receiving a frame (the received frame) at a port of said switch, said received frame containing one or more indicia of frame type designation, *said one or more indicia of frame type designation comprising at least a protocol type*;

deriving a virtual local area network (derived VLAN) value in response to said one or more indicia of frame type designation, said derived VLAN internal to said switch;

accessing a forwarding data base with said derived VLAN value to determine a destination address; and

forwarding, in response to said derived VLAN value, said received frame to an output port for transmission to the destination.

By way of background, Crayford describes a network switch for switching frames

across multiple ports. Crayford reads a VLAN tag from a frame received by the switch,

and routes the frame according to the VLAN tag. (Crayford, col. 8, lines 23-48). When

receiving a frame from an untagged port, the frame may be routed according to a Source

Address (SA), a receive (RX) port number, and a Destination Address (DA). (col 8.,

lines 56-62).

As noted by the Examiner, at Paragraph 7 of the Final Office Action, "Crayford

does not expressly disclose wherein said indicia of frame type designation further com-

prise a protocol type." (Office Action, Paragraph 7).

In sharp contrast, Applicant claims "*said one or more indicia of frame type designation comprising at least a protocol type.*"

Accordingly, Applicant respectfully urges that Crayford is legally precluded from anticipating claim 1 under 35 U.S.C. § 102(e) because of the absence from Crayford of Applicant's "*said one or more indicia of frame type designation comprising at least a protocol type.*"

Further Consideration of Claim 1, in View of Rejected Elements of Claim 3

In the interest of advancing prosecution of this case, Applicant notes that the recitation in claim 1 of "*said one or more indicia of frame type designation comprising at least a protocol type,*" was originally recited (in part) in cancelled claim 3, which depended from claim 1. Therefore, Applicant would like to specifically address the Examiner's rejection of this element.

Specifically, at Paragraph 7 of the Final Office Action, the recitations of claim 3 (now incorporated, in part, into amended claim 1) were rejected under 35 U.S.C. § 103(a) as being unpatentable over Crayford in view of Shani, U.S. Patent No. 6,023,563, issued on February 8, 2000 (hereinafter "Shani"). Applicant respectfully traverses this rejection and urges that claim 1 is allowable.

As noted by the Examiner, at Paragraph 7 of the Final Office Action, "Crayford does not expressly disclose wherein said indicia of frame type designation further comprise a protocol type." (Office Action, Paragraph 7). Thus, Crayford also does not disclose *deriving a virtual local area network (derived VLAN) value in response to said*

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one or more indicia of frame type designation, said one or more indicia... comprising at least a protocol type. Combining Shani with Crayford still fails to yield this element.

By way of background, Shani discloses a networking switch (NS) for handling network traffic without the complexity and expense of a full router. (Shani, Abstract). To learn the network topology, the NS listens passively to every frame flowing through the network, and also listens to the routers' routing decisions as they respond to network queries. (col. 9, lines 27-30). The NS stores this topology information in a database that correlates each known MAC address to a port through which it is connected to the NS. (col. 9, lines 30-32). The NS may then modify a data packet destined for a router to include the final destination MAC address (if known), *based on the network destination address (NDA)*, and then may transmit the modified packet to its destination. (col. 6, lines 39-42, 46-48).

Notably, Shani uses the network destination address (NDA) as the "key" for searching the network topology database. (col. 6, lines 46-48; col. 10, lines 53-55). Thus, Shani derives a destination MAC address and port number in response to the NDA. (col. 8, lines 53-55).

As discussed above, Crayford may route a frame according to a VLAN tag (Crayford, col. 8, lines 23-48), or according to a Source Address (SA), a receive (RX) port number, and a Destination Address (DA). (col 8., lines 56-62).

Therefore, even if selectively combined, Shani and Crayford at best disclose routing according to an NDA, a VLAN tag, a SA, a RX port, and/or a DA. Neither reference

discloses *deriving a virtual local area network (derived VLAN) value in response to said one or more indicia of frame type designation, said one or more indicia... comprising at least a protocol type*, as claimed.

At Paragraph 7 of the Final Office Action, the Examiner noted Table 1 of Shani, which includes a reference to a "Protocol type". In Shani, a "network-layer protocol type" may, indeed, be extracted from a frame. (Shani, col. 10, lines 47-52). However, the "network-layer protocol type" is used by Shani to make required adjustments to *other* fields in the frame. (col. 11, lines 1-6). "For example, in the IP protocol, the NS decrements the field known as Time-to-live (TTL), or in the IPX protocol the NS increments the field known as Transport Control." (col. 11, lines 3-6). Thus, Shani uses the "network-layer protocol type" to make adjustments to protocol-specific fields of a frame, *after* the frame's destination MAC address and port number are identified.

Thus, even if combined, Shani and Crayford still at best disclose routing according to an NDA, a VLAN tag, a SA, a RX port, and/or a DA. Only by selectively ignoring specific elements of both references and then by adding new elements to each, and only with the benefit of impermissible hindsight, could any such combination begin to approach Applicant's claimed novel *deriving a virtual local area network (derived VLAN) value in response to said one or more indicia of frame type designation, said one or more indicia... comprising at least a protocol type*.

Applicant respectfully urges that Crayford and Shani, either taken singly or taken in any combination, are legally insufficient to render claim 1 obvious under 35 U.S.C. § 103(a) because of the absence from each of the cited references of Applicant's claimed

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novel *deriving a virtual local area network (derived VLAN) value in response to said one or more indicia of frame type designation, said one or more indicia... comprising at least a protocol type.*

Therefore, independent claim 1 is believed to be allowable.

Dependent claims 2 and 4-8 are believed to be dependent from an allowable base claim and likewise allowable.

Conclusion

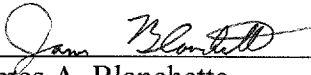All independent claims are believed to be allowable.

All dependent claims are believed to be dependent from allowable independent claims and likewise allowable.

Favorable action is respectfully solicited.

In the event the Examiner deems personal contact desirable in the disposition of this case, the Examiner is encouraged to call the undersigned attorney at (617) 951-2500.

Please charge any additional fee occasioned by this paper to our Deposit Account

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Respectfully submitted,

James A. Blanchette
Reg. No. 51,477
CESARI AND MCKENNA, LLP
88 Black Falcon Avenue
Boston, MA 02210-2414
(617) 951-2500